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ABSTRACT

This paper: (1) reviews the development and implementation of a test designed to assess the competencies of public high school students in Atlanta, Georgia, preceding their graduation; and (2) presents the results of indicator cluster correlations between the new "Basic Skills Tests" and other reading and mathematics basal tests currently in use in the Atlanta Public Schools. Areas tested included reading, mathematics, problem solving, writing, and speaking/listening. In regard to development of the Georgia test, the paper briefly describes: (1) the process by which the competencies examined were refined and validated, (2) the test item writing process, and (3) the initial field testing of the test among 10th grade students. A number of legal concerns related to competency-based graduation requirements are detailed, with an emphasis on validity, reliability, and potential bias. In addition, there is a brief discussion of the indicator correlations (shown in the appendix) with the Georgia Criterion-Referenced Tests, the Houghton Mifflin Reading series, the Holt Mathematics series, California Mathematics Tests, the Prescriptive Reading Inventory, and the Diagnostic Mathematics Series. (GC)

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A PRELIMINARY REPORT ON THE BASIC SKILLS TEST

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January 1981

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The Competency Based Education Program adopted by the State Board of Education in March 1980 contained several revisions in the requirements for high school graduation. Among the changes is the requirement that students demonstrate mastery of minimal competencies in the areas of reading, mathematics, problem-solving, writing, and speaking/listening.

The Basic Skills Test was developed by the State Department of Education in conjunction with Georgia State University to assess these competencies. The tests will be administered for the first time to all tenth grade students enrolled in public schools throughout the State of Georgia in February 1981. Although the results of the tests will be provided for the students and for the school systems, the scores will not be used as part of the graduation requirements until 1985. That is, the ninth graders who enter high school in the fall of 1981 and who take the Basic Skills Test in FY '83 will be the first group of students required to demonstrate mastery of the competencies.

The original purpose for this paper was to provide a critique of the test in terms of the development, the quality, and the potential impact on the students of the Atlanta Public Schools (APS). As a first step in this process, the recently published indicator clusters and sample test items were reviewed. Secondly, the indicator clusters were correlated to the skills included in the reading and mathematics basal texts currently in use in APS. The results of those correlations are discussed later in this paper.

As a third step, a meeting was scheduled with the test developers to learn of the developmental aspects of the test. The meeting was held on December 18, 1980, at the State Department of Education and was attended by:

Dr. Paul Vail, Director, Division of Standards and Assessment, State Department of Education

Dr. Richard Kicklighter, Associate Director, Division of Standards and Assessment, State Department of Education

Dr. Stan Bernknopf, Coordinator of Student Assessment, State Department of Education

Mrs. Elizabeth Creech, Consultant for Student Assessment, State Department of Education

Dr. Robert Rentz, Associate Professor, Department of Educational Foundations, Georgia State University and Project Director, Georgia Assessment Project

Mr. David Roberts, Project Manager, Georgia Assessment Project, Georgia State University

Ms. Danata Renfrow, Research Associate, Georgia Assessment Project, Georgia State University

Dr. Jarvis Barnes, Assistant Superintendent for Research, Evaluation, and Data Processing, Atlanta Public Schools

Dr. Carole McCarson, Research Associate, Division of Research, Evaluation, and Data Processing, Atlanta Public Schools

Dr. Ray Sweigert, Research Assistant, Division of Research, Evaluation, and Data Processing, Atlanta Public Schools

The information shared at that meeting is discussed in the following section of this report.

These preliminary activities, in addition to a cursory review of the literature, led to the discovery that the issue is a very complex one. The field of minimum competency testing, while very popular, is still in its infancy, developmentally. There are no well established methods for defining competencies nor for measuring them. Moreover, the Georgia Basic Skills Test is still in the developmental phase. Therefore, a complete critique at this time is not possible.

This paper, therefore, will serve only as the initial report in a proposed series of reviews. The findings yielded by the investigation thus far will be presented. In addition, plans and recommendations for future activities in this area will be reported.

TEST DEVELOPMENT

Description of the Competencies

The development of the Basic Skills Test began four years ago when ten pilot school systems were asked to identify the competencies which should be assessed for graduation requirements. One school system from each congressional district in Georgia was asked to participate in this initial phase of the test development. Each system worked independently with the same charge: to involve the community and local educators in the identification of the skills which should be required for high school graduation.

Refinement and Validation of the Competencies

While there was great overlap and general agreement of the skills generated by the ten pilot systems, there was considerable variation in the degree of specificity of the statements, the levels of difficulty inherent in the statements, etc. The next step in the development, therefore, was to review, refine, and consolidate the descriptive statements.

A committee was formed of professionals with known competencies in education (e.g., principals, reading specialists, math coordinators, teachers, etc.). The committee met for several days to review the descriptive statements systematically. The committee considered the appropriate categorization of the statements, the importance of the skills for graduation, and the emphasis typically given to the skills in school.

Curriculum staffs then worked with the competency statements to achieve uniformity with respect to consistency in language and specificity. The competency descriptions were extended to include working definitions of each indicator statement and guidelines for measurement.

Item Writing

Detailed item-writing guides were developed by the team at Georgia State University which was granted the Georgia Assessment Project contract. The guides included precise statements for the item writers with respect to context, difficulty, and content.

The item-writing workshops were attended by professionals in public education throughout Georgia. More than 1,000 test items were written. In a subsequent item review by curriculum specialists, 150 items were eliminated, leaving 850 items for the field test in the fall of 1980.

(It should be noted that the sample test items which appear in the recently published Basic Skills Assessment: Overview and Content Description are among the 150 items rejected in this first review of test items. Therefore, they should not be taken as examples of the quality of the items which actually will appear on the test.)

Additional Reviews

The indicator clusters of the Basic Skills Test have been reviewed for consistency with the Essential Skills for Georgia Schools and with the objectives of the eighth grade Georgia Criterion-Referenced Tests. Plans have been made to coordinate the objectives across all levels of the Georgia Criterion-Referenced Tests. Thus, it should be possible in the future to trace the progress students are making toward the mastery of the required competencies beginning with the first grade.

Reviews also are currently in process throughout Georgia by 3,000 teachers, 500 members of the State School Board Association, and 500 members of Parent Teacher Associations.

Field Test

Items were field tested by sample school systems throughout the state in the fall of 1980. From the results, 600 items were selected to create two parallel forms of the Basic Skills Test. One of the two forms will be administered to all tenth grade students in February 1981.

Summary

The test development procedures to this point are satisfactory. Critical questions, however, still remain to be answered. These questions relate to validity, reliability, bias, and standards. Reports on these issues, of course, depend on the results of the initial statewide test administrations.

QUESTIONS UNANSWERED

1. In the document, "An Instructional Planning Guide for Georgia's Competency-Based Education Program," the State Department of Education identified ten legal concerns related to competency-based graduation requirements. The ten concerns are related to:

   a. Results reliability . . . the test should yield consistent results across test administrations . . .

b. Predictive validity . . . the test must accurately predict future performance in adult life roles.

c. Concurrent validity . . . the test should yield performance data which is compatible with other known performance data on a given student . . .

d. Essentiality . . . the performance expectations represent those skills, knowledge, and understandings which are essential for one to function effectively and efficiently in comtemporary adult roles . . .

e. Content validity . . . test items or performance indicators must match the skill objectives being tested . . .

f. Non-biased instruments or test processes . . . the tests or techniques used to assess student competency must be free of bias . . .

g. Non-biased against handicapped students . . . students who are handicapped in meeting the performance standards required for high school graduation require differential assessment instruments and processes, just as they need different teaching strategies . . .

h. Due process validity . . . all students and their parents or guardians are fully notified about the changes in advance of any effect on the students . . .

i. Curriculum validity . . . the curriculum provided a student does offer opportunities for the student to acquire the adult life role competencies required for high school graduation . . .

j. Instructional validity . . . what is required for graduation, and what is planned in curriculum resources, matches what is provided within the instructional setting — the classroom . . .

The last three items particularly address the responsibilities of local school systems. However, the State Department of Education should defend the Basic Skills Test with respect to the other seven concerns. Are there any plans for such a response? If so, will the response be published and disseminated sufficiently in advance of the FY '83 test administration for review by school systems and other interested parties?

2. With respect to the concerns listed in item 1, the issue of test bias is of particular concern to APS. The State Department of Education must specify the steps that were and will be taken to detect and control for bias against any group. Other testing programs frequently have been attacked when a disproportionate number of minorities fail the test. Can the State Department of Education defend the validity of the Basic Skills Test against this line of attack?

3. How will the standards or "cut-off" scores be established?

4. Will the State Department of Education make an effort to determine and respond to the logistical problems created by the test administration? For example, the proper administration of a seven-hour test to all students disrupts the entire school schedule for at least one week. What steps will be taken to ensure that the test length is kept to a minimum and that adequate administration time is built into the test schedule?

CORRELATIONS OF THE BASIC SKILLS INDICATOR CLUSTERS TO OTHER MEASURES

The indicator clusters were correlated to the objectives of the Georgia Criterion-Referenced Tests (GCRT), the Houghton Mifflin Reading Series, and the Holt Mathematics Series. Due to the number of pages required, the results appear in the appendix of this report. The correspondence of the indicator clusters to the objectives of the California Achievement Tests (CAT), the Prescriptive Reading Inventory (PRI), and the Diagnostic Mathematics Inventory (DMI) is given in the appendix as well. The indicator clusters for the Problem Solving subtest of the Basic Skills Test are defined in terms of the reading and math indicator clusters. For this reason, separate correlations are not provided for this subtest.

A review of these tables indicate that all of the indicator clusters are introduced very early in the basal programs, some as early as first grade. Moreover, each indicator cluster reappears for at least several years after its introduction. In reading, for example, once the skill is introduced, it is reinforced each successive year through the eighth grade. Five of the 13 reading indicator clusters (38%) are introduced as early as the first grade. All but one of the reading indicator clusters are introduced at least by the fourth grade.

All but one of the reading indicator clusters were measured by the 1980 GCRT objectives for grades 4, 8, and/or 10. As might be expected, the reading indicator clusters are more closely related to the Grade 10 GCRT objectives than to the Grade 4 or Grade 8 objectives. Ten of the 13 reading indicator clusters were represented on the Grade 10 GCRT. The 1980 performance on those objectives ranged from 27 to 76 percent mastery, with a mean level of mastery of 53 percent.

One might expect the level of performance to be higher for those objectives that were introduced as early as the first grade and reinforced each year thereafter. It is true that the two objectives on which performance was highest were objectives that were introduced in the first grade. However, one objective on which performance was lowest also was introduced in the first grade.

Similar to reading, the math indicator clusters are introduced early in the basal program and reinforced at least for several years thereafter. The continuous reinforcement of skills is not quite so great for the math compared to reading skills, however. Sixteen of the 22 math indicator clusters are reinforced through the eighth grade; four are reinforced through the seventh grade. Two indicator clusters are introduced early, reinforced for a total of five years, then discontinued (one covers grades 1-5; the other, grades K-4). Seven of the math indicator clusters (32%) are introduced by the first grade.

All but two of the math indicator clusters were measured by the 1980 GCRT objectives for grades 4, 8, and/or 10. Unlike reading, however, the math indicator clusters more closely correspond to the Grade 8 GCRT than to the Grade 10 GCRT. The math indicator clusters correspond to 16 of the Grade 8 objectives and 14 of the Grade 10 objectives. There was no apparent difference in the level of performance on the Grade 8 and Grade 10 objectives which correspond to a single indicator cluster.

Twelve of the indicator clusters corresponded to objectives on both the Grade 8 and Grade 10 GCRT. In those cases, there was no apparent difference in the 1980 level of performance for the two grades. In three cases, the level of performance was the same

for both grades. In four cases, the percent mastery was higher for Grade 10, and in five cases the percent mastery was higher for Grade 8.

Like reading, there was no evidence that performance was higher for objectives that were introduced earlier in the basal program.

In summary, despite the early introduction of the skills in the basal programs, and the reintroduction in subsequent years, performance on the corresponding GCRT objectives has not been impressive. At this time there is no reason to anticipate that performance on the Basic Skills Test will be any better than the performance on the corresponding GCRT objectives.

Many of the skills represented by the indicator clusters also are measured by the CAT, PRI, and DMI. The results of these tests in conjunction with the results of the GCRT should provide ongoing assessment of the skills which appear on the Basic Skills Test.

ISSUES FOR CONSIDERATION

1. As far as can be determined at this time, the indicator clusters of the Basic Skills Test relate to the application of skills taught in the elementary and middle school. Is there a need for APS to develop its own internal assessment of competencies related to other graduation requirements (e.g., high school English, Language Arts, Science, Social Studies, Mathematics)?

2. Since the competency skills are integrated into the APS curriculum, a study should be undertaken to determine the causes for failure on the test. For example, were the skills actually taught? Was there evidence that the student(s) demonstrated mastery of the skills at the time they were taught (e.g., chapter tests work sheets, etc.)? Is the difficulty related to the failure to master the skill or the inability to apply a skill which had been mastered?

3. What is the utility of the Basic Skills Test to APS? The specific benefits of the program for APS should be determined and clearly expressed. Not only would this clear position be helpful to school personnel, but it would enable APS to petition the State Department of Education for the maintenance or improvement of those features.

4. In order to ensure that the minimal competency testing program does not limit the educational program, APS should continue its assessment of student performance at the upper end of the achievement continuum.

5. The initiation of minimum competency testing programs usually has been followed by court suits. Georgia, most likely, will be no exception. Unfortunately, APS could face legal challenges as well. Preparation should begin now to anticipate the possible grounds for any legal suits.

SUMMARY

The purpose of this report was to present the findings of the initial review of the Basic Skills Test. The test development to this point has proceeded respectably. The indicator clusters measured by the test represent the application of skills taught and reinforced throughout elementary and middle school. Examination of the 1980 results of Atlanta students on corresponding GCRT objectives, however, reveals that the performance levels of these skills is low.

A thorough critique of the test must be delayed until reports are available on validity, reliability, bias, and standards. In the meantime, the understanding of minimum competency testing can be facilitated by reviews on:

1. Legal aspects and implications from other minimum competency testing programs.
2. Development of other minimum competency testing programs.
3. Methods used for establishing standards.
4. Position statements on minimum competency-testing programs.

Reports will be prepared and disseminated on these topics.

APPENDIX A
BASIC SKILLS TEST: READING

INDICATOR CLUSTERS AND SAMPLE TEST ITEMS

INDICATOR CLUSTER	SAMPLE TEST ITEMS
Literal Comprehension	
INDICATOR CLUSTER 1: THE STUDENT DISTINGUISHES BETWEEN FACT AND OPINION. (weight, 4%)	INDICATOR CLUSTER 1: Which of the following statements is an opinion? A. Hank is the cutest cat in the neighborhood. B. Hank ate three cans of cat food last week. C. Hank chipped a tooth chewing a bone yesterday. D. Hank is a 20-pound, long-haired tomcat.
Assessment Characteristics: This cluster is assessed with such materials as editorials, books, movies and news reports. If a passage is used for assessment, the facts and opinions are based on the passage exclusively. Statements of value are not considered facts.	
INDICATOR CLUSTER 2: THE STUDENT INTERPRETS SEMANTIC RELATIONSHIPS. (weight, 4%)	INDICATOR CLUSTER 2: After two weeks without food, the dog voraciously ate his food. Voraciously means A. slowly B. hungrily C. angrily D. carefully
Assessment Characteristics: This cluster is assessed by requiring students to substitute words with appropriate connotations or by paraphrasing individual sentences. Passages used give context clues to help determine the meaning of the word(s) in the question.	
INDICATOR CLUSTER 3: THE STUDENT RECOGNIZES EXPLICITY STATED MAIN IDEAS, DETAILS, SEQUENCES OF EVENTS, AND CAUSE AND EFFECT RELATIONSHIPS. (weight, 18%)	INDICATOR CLUSTER 3: Chimpanzees traveled in space before people did. Scientists wanted to know whether the human body and brain would be able to function in a state of weightlessness. So before they sent humans into space, scientists sent frogs, mice, rabbits, dogs and monkeys. The scientists decided to send chimpanzees into space because the chimpanzee's brain is similar to the human brain in size, weight and structure. If the chimpanzees could make the journey successfully, then humans would try. The purpose of sending chimpanzees into space was to find out whether they could A. get food and water by pressing levers. B. live in a state of weightlessness. C. find the other animals that had been sent into space. D. learn to rest after every hour's work.
Assessment Characteristics: The main idea is a major point or purpose of the passage. Correct responding should not require prior knowledge; answer is passage dependent. The details of events selected for item content are necessary or relevant for overall passage comprehension.	

INDICATOR CLUSTER 4: THE STUDENT FOLLOWS DIRECTIONS. (weight, 4%)

Assessment Characteristics: Directions are clear and unambiguous. Directions are presented in narrative form, or lists or steps. Directions should include content which is unfamiliar to the student.

INDICATOR CLUSTER 4: Directions for making Georgia Smores

Ingredients:

1 graham cracker per person
4 large marshmallows per person
1/4 chocolate candy bar per person

Directions:

Cover graham cracker with marshmallow; cover with sections of chocolate bars. Put in a preheated oven at 350 F. Bake until candy melts.

Variations:

Spread peanut butter before adding marshmallows — spread with jelly or preserves before adding marshmallows. Top with salted nuts.

For a regular Georgia Smore, which is the first ingredient added to the graham cracker according to these directions?

A. marshmallow
B. nuts
C. chocolate
D. peanut butter

Inferential Comprehension

INDICATOR CLUSTER 5: THE STUDENT INTERPRETS FIGURATIVE LANGAUGE. (weight, 3%)

Assessment Characteristics: This cluster includes metaphors, similes and hyperboles. Idioms are not used. Interpretation is based on semantic similarity between use of figurative language and correct response.

INDICATOR CLUSTER 5: After Tina tried out for a job with the new band, Tom told her that her skill on the drums was beyond his wildest dreams.

Tom meant that

A. Tina needed to calm down when she played.
B. he had fallen asleep during her tryout.
C. he did not really need a drummer.
D. Tina did an outstanding job of playing.

INDICATOR CLUSTER 6: THE STUDENT RECOGNIZES PROPAGANDA TECHNIQUES. (weight, 3%)

Assessment Characteristics: Items do not require the student to identify particular propaganda techniques, but rather to identify propaganda via intent to mislead or misinform.

INDICATOR CLUSTER 6: A woman on TV said that boys liked best the girls who used the product she was advertising. Which of these do you think the TV woman wanted to do?

A. report a fact
B. let you in on a good thing
C. make money for TV
D. sell the product

INDICATOR CLUSTER 7: THE STUDENT RECOGNIZES IMPLICITY STATED MAIN IDEAS, DETAILS, SEQUENCES OR EVENTS AND CAUSE AND EFFECT RELATIONSHIPS. (weight, 18%)

Assessment Characteristics: Implicitly stated information can be thought of as that information contained "between the lines" and yet passage dependent.

INDICATOR CLUSTER 8: THE STUDENT MAKES PREDICTIONS, GENERALIZATIONS AND COMPARISONS. (weight, 13%)

Assessment Characteristics: Prediction implies a future event; a degree of probability exists. Generalizations are the result of inductive reasoning; specifics or details are presented from which the general statement is derived. Deduction may be involved as well. Comparisons are made based on some defined variable which is constant for that comparison.

INDICATOR CLUSTER 9: THE STUDENT DRAWS CONCLUSIONS. (weight, 4%)

Assessment Characteristics: Conclusions are considered the result of a deductive or inductive reasoning process. The conclusion may act as a summary statement, account for a synthesis of the information or brings closure to the passage. In most cases, multiple pieces of information on which to base a conclusion are included in the passage.

INDICATOR CLUSTER 7: Mrs. Banks was driving down the street. She was on her way to a meeting at the library. She was a few minutes late and was very anxious to get there because she was chairperson of the committee. Two blocks away from the library, a police officer stopped Mrs. Banks. As he pulled out his ticket book, he asked her why she was in such a rush.

Why did the police officer stop Mrs. Banks?

A. He wanted to say hello.
B. She was speeding.
C. They were good friends.
D. She was on the wrong street.

INDICATOR CLUSTER 8: The land of Mingo is surrounded by an ocean. Because of the ice and snow, there is little land for farming, so the people must make a living in other ways. The Atlantic Ocean provides good fishing year round. Since the inhabitants of this land are good sailors, they spend a lot of time on the water.

What kind of industry would be attracted to Mingo?

A. textile mills
B. farming
C. auto manufacturing
D. ship building

INDICATOR CLUSTER 9: Georgia peach farmers recently gathered in Atlanta to discuss the current status of peach farming in the state. Several issues were presented during the meeting. Among the topics was a discussion about the mild winter last year and the fact that there were not enough cold days for the peach crop to develop well. Last year's crop was also plagued by insects that ate holes in the peaches while they were still ripening on the trees.

What could you conclude from the passage?

A. South Georgia peach farmers had a worse year than North Georgia peach farmers.
B. The peaches without holes tasted good.
C. It was a bad year for peach farmers.
D. Next year will be a good year for peaches.

Study Skills

INDICATOR CLUSTER 10: THE STUDENT INTERPRETS GRAPHIC INFORMATION, INSTRUCTIONS AND LABELING INFORMATION, FORMS AND APPLICATIONS, TRANSPORTATION INFORMATION, AND OCCUPATIONAL AND CAREER INFORMATION. (weight, 17%)

Assessment Characteristics: The emphasis of this cluster is application rather than terminology. Graphic rather than narrative stimulus is used during assessment. Items represented are actual forms or other information presented in practical situations.

INDICATOR CLUSTER 11: THE STUDENT RECOGNIZES RELEVANCE OF DATA. (weight, 4%)

Assessment Characteristics: Items pertaining to this cluster provide the student with the opportunity to identify relevant or irrelevant pieces of information. The student will identify what further piece(s) of information may be necessary to respond to a task or question or identify unnecessary information which may cause confusion or be extraneous to the situation.

INDICATOR CLUSTER 12: THE STUDENT RECOGNIZES APPROPRIATE REFERENCE RESOURCES. (weight, 4%)

Assessment Characteristics: This cluster assesses the student's ability to identify various reference resources such as a card catalog, an encyclopedia, types of directories and general library skills. Also included are Yellow Pages, classified ads, recipes/cook books and instruction manuals.

INDICATOR CLUSTER 10: Which of the following would correctly complete the information requested below?

APPLICATION FOR EMPLOYMENT

Name: _____
Street
Address: _____

City: _____ State _____ Zip Code _____

A. Ricky Jones
118 Main Street
Valdosta, Georgia 31601

B. Ricky Jones
728-4290
Valdosta

C. Ricky Jones
Valdosta, 31601

D. Ricky Jones
118 Main Street
Valdosta

INDICATOR CLUSTER 11: If you were interested in the eating habits of Indians, what section in a reference book under the heading of American Indians would be the most useful?

A. Hunting habits
B. Climate
C. Agriculture
D. Types of dwellings

INDICATOR CLUSTER 12: If you needed to find information about purchasing new tires for your car, where would you most likely look for information?

A. telephone directory
B. encyclopedia
C. atlas
D. almanac

INDICATOR CLUSTER 13: THE STUDENT LOCATES INFORMATION IN REFERENCE MATERIALS. (weight, 4%)

Assessment Characteristics: This cluster assesses the student's ability to use various sources of information including library reference materials.

INDICATOR CLUSTER 13: On which pages would you look to find out about Public Law #91?

A. 36-38
B. 48-49
C. 63-64
D. 69-73

Oil, 29 30
Oxygen, 11
  importance to plants, 15
  importance in breathing, 15
  amount in air, 13
Particulates, 74-78
Pesticides, 23, 63
Philadelphia, 46
Plants
  crop damage, 51, 52, 53, 54, 55
  forests, 10, 46-49, 51
  importance of oxygen, 15
Public Law #91, 63-64
Smoke, 36, 37, 38. See also Particulates
Smoking, 46-47, 48, 66
Soot, see Particulates
Sunlight, 23, 31
Tests to measure pollution, 19, 33, 59, 61, 69-73
Trucks, see Automobiles and trucks

BASIC SKILLS TEST: MATHEMATICS

INDICATOR CLUSTERS AND SAMPLE TEST ITEMS

INDICATOR CLUSTER		SAMPLE TEST ITEMS
Number Concepts		
INDICATOR CLUSTER 1:	THE STUDENT TRANSLATES FROM WORDS TO NUMERALS AND THE REVERSE. (weight, 5%)	INDICATOR CLUSTER 1: What is the correct way to write thirteen thousand nine hundred eighty-nine? A. 13,989 B. 13,998 C. 130,989 D. 139,890
Assessment Characteristics:	In the assessment of this cluster whole numbers and decimals are appropriate; however, fractions or percents should not be included for conversion.	
INDICATOR CLUSTER 2:	THE STUDENT ORDERS FRACTIONS, DECIMALS OR PERCENTS. (weight, 7%)	INDICATOR CLUSTER 2: Marie just got a job and is figuring out her budget. She spends 28% of her income on rent, 29% on food, 13% on gas, 16% on entertainment, and 14% goes to savings. What is the order of expenses from LEAST to GREATEST? A. rent, food, gas, entertainment, savings B. gas, savings, entertainment, rent, food C. entertainment, food, gas, savings, rent D. food, rent, entertainment, savings, gas
Assessment Characteristics:	Items used for assessment are mutually exclusive, not involving combinations of these number concepts. If fractions are included they are limited to halves through tenths, plus twelfths and hundredths, not sixths, sevenths or ninths. Mixed numbers can be used; however, improper fractions are not appropriate.	
INDICATOR CLUSTER 3:	THE STUDENT TRANSLATES FROM DECIMALS TO PERCENTS AND THE REVERSE. (weight, 5%)	INDICATOR CLUSTER 3: Which is .53 written as a percent? A. .53% B. 5.3% C. 53% D. 530%
Assessment Characteristics:	The student's understanding of the conversion process of these number concepts in any given context is the primary consideration. For this cluster, the use of decimals over one, smaller than hundredths; percents with fractions or decimals and percents over 100 are not suitable.	
INDICATOR CLUSTER 4:	THE STUDENT TRANSLATES FROM FRACTIONS TO PERCENTS AND THE REVERSE. (weight, 5%)	INDICATOR CLUSTER 4: Which fraction equals 37 1/2%? A. 3/8 B. 3/7 C. 1/2 D. 7/3
Assessment Characteristics:	In this cluster, assessment includes percents with fractions in combination and repeating decimals. Fractions are limited to halves, thirds, fourths, fifths, eighths, tenths and hundredths. The use of mixed numbers and percents over 100 are not suitable.	

INDICATOR CLUSTER 5: THE STUDENT TRANSLATES FROM FRACTIONS TO DECIMALS AND THE REVERSE. (weight, 3%)

Assessment Characteristics: In measuring the student's ability to achieve this cluster, improper fractions and decimals smaller than thousandths are not appropriate. Suitable means include the use of mixed numbers and repeating decimals.

Number Operations

INDICATOR CLUSTER 6: THE STUDENT SELECTS APPROPRIATE OPERATIONS FOR A GIVEN PROBLEM SITUATION. (weight, 2%)

Assessment Characteristics: Money and common decimals are among the productive subject areas for the measurement of this cluster.

INDICATOR CLUSTER 7: THE STUDENT COMPUTES WITH WHOLE NUMBERS, FRACTIONS, DECIMALS, AND PERCENTS. (weight, 3%)

Assessment Characteristics: The assessment of this cluster may include horizontal and vertical presentations using mixed numbers, like and unlike denominations, simplifying fractions, etc. Identity and inverse properties, improper fractions, percents over 100 or less than one, percents of increase or decrease are to be excluded. The use of graphics and word problems in items are not suitable for this indicator.

INDICATOR CLUSTER 8: THE STUDENT APPLIES PROPERTIES OF OPERATIONS (weight, 2%)

Assessment Characteristics: This cluster assesses a student's application of the identity, inverse, commutative, associative and distributive properties of operations. The identification of a particular property is not the objective in this case; therefore, the selection of the correct option should not be predicated on same.

INDICATOR CLUSTER 5: Which is the same as .75?

A. 7/15
B. 2/3
C. 3/4
D. 5/7

INDICATOR CLUSTER 6: Mailing cost: Second class mail is $.10 for the first 2 ounces, $ .06 for each additional ounce or fraction.

Which shows the total cost of mailing a 15 ounce package?

A. 2 (.10) + 13 (.06)
B. 2 (.10) + 15 (.06)
C. .10 + 13 (.06)
D. .10 + 14 (.06)

INDICATOR CLUSTER 7: Soap $ .43

Three bars of soap would cost

A. $.86
B. $.89
C. $1.23
D. $1.29

INDICATOR CLUSTER 8: Which of the following statements is always true?

A. $(a + b) + c = ab + c$
B. $(a + b) + c = a + (b + c)$
C. $ab + c = (a + b) + c$
D. $a + b + c = abc$

INDICATOR CLUSTER 9: THE STUDENT SOLVES SIMPLE WORD PROBLEMS.

Assessment Characteristics: Computation, purposely, is to be kept simple. The assessment of this cluster includes asking for the solution equation only (not the answer) and problems demanding computation. No academic word problems or problems involving percent of increase or decrease are to be used. Sales tax and changing recipes are among suggested contexts for this cluster.

Relations and Formulas

INDICATOR CLUSTER 10: THE STUDENT APPLIES PROPORTIONS. (weight, 2%)

Assessment Characteristics: The aim of this cluster is to determine the student's ability in the application of proportional relationships. Assessment includes the use of similar drawings or scale drawings as well as unit pricing and "better buys" concept in item presentation.

INDICATOR CLUSTER 11: THE STUDENT APPLIES FORMULAS. (weight, 2%)

Assessment Characteristics: Formulas such as simple interest, area-circumference, distance/rate, miles per gallon and perimeter are appropriate in the assessment of a student's ability in formula application. Complex formulas which would include the Pythagorean Theorem and compound interest are not to be in the measurement of this indicator. Formulas may be supplied.

Statistics

INDICATOR CLUSTER 12: THE STUDENT COMPUTES THE MEAN AND MEDIAN. (weight, 2%)

Assessment Characteristics: For any set of numbers, in the assessment of this cluster, the mean and the median should be different. The median is determined from a set with an odd number of elements which may be arranged in order. The mean should be a whole number.

Cl. 25

INDICATOR CLUSTER 9: Hal and Janet decided to earn some money by washing cars. On the first day they made $8.75, and on the second day they made $13.25. How much more money did they make on the second day than on the first day?

A. $2.75
B. $3.25
C. $3.50
D. $3.75

INDICATOR CLUSTER 10: If a motorcycle goes 25 miles on a half-gallon, how many miles will it travel on 3 gallons?

A. 50
B. 75
C. 125
D. 150

INDICATOR CLUSTER 11: If your average speed is 60 kilometers, it takes 3 1/2 hours to travel from Tampa to Miami. What is the distance between the two cities?

A. 20 kilometers
B. 180 kilometers
C. 210 kilometers
D. 360 kilometers

INDICATOR CLUSTER 12: There are five children in the Russell family. Ann is 12 years old. Willis is 11. Tom is 9. Calvin is 6 and Martha is 2 years old. What is the mean age of the Russell children?

A. 7
B. 8
C. 9
D. 10

25

INDICATOR CLUSTER 13: THE STUDENT DETERMINES PROBABILITIES. (weight, 2%)

Assessment Characteristics: Events with zero or one probability are suitable assessment areas for this cluster. Limitations include the presentation of probabilities as a percent; joint (and/or), independent and dependent events; and the use of combinations or permutations.

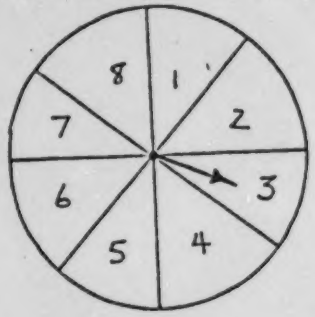
INDICATOR CLUSTER 14: THE STUDENT ORGANIZES DATA INTO TABLES, CHARTS, AND GRAPHS. (weight, 6%)

Assessment Characteristics: Assessment problems in this cluster involve the selection of the appropriate representation of the data as well as some interpretation. Graphs used can include bar graphs, line graphs, circle graphs and pictographs which may be incorrectly labeled or have missing information.

INDICATOR CLUSTER 15: THE STUDENT INTERPRETS DATA IN THE FORM OF TABLES, CHARTS AND GRAPHS. (weight, 7%)

Assessment Characteristics: The ability of a student to discover a relationship or rule from the presented material is assessed in this cluster. Formats wherein data can be interpreted may include circle graphs, bar graphs, line graphs and pictographs.

INDICATOR CLUSTER 13: If you were to spin the pointer on the spinner, the probability of its landing on either 1 or 2 is



A. 1/2
B. 1/4
C. 1/8
D. 1/3

INDICATOR CLUSTER 14: The label inside Martha's shirt states that the fabric content is 20% cotton, 50% linen and 30% polyester. Which of the following graphs shows these proportions?

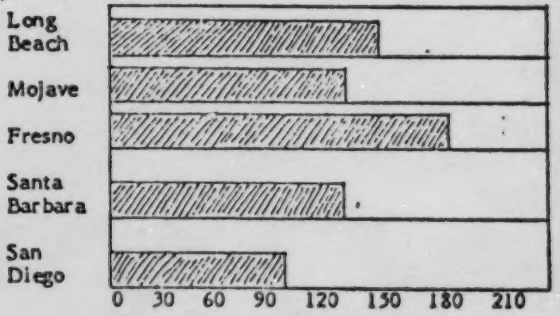
(A)

(C)

(B)

(D)

INDICATOR CLUSTER 15: Distances of cities from Los Angeles



Which two cities are approximately the same distance from Los Angeles?

A. Mojave and Santa Barbara
B. Fresno and Santa Barbara
C. Mojave and San Diego
D. Santa Barbara and San Diego

Measurement and Estimation

INDICATOR CLUSTER 16: THE STUDENT IDENTIFIES CUSTOMARY OR METRIC UNITS TO MEASURE LENGTH, AREA, VOLUME, WEIGHT, TIME, AND TEMPERATURE. (weight, 14%)

Assessment Characteristics: This cluster involves choosing the unit that applies to a specific type of measurement such as picking the appropriate type or size unit. It is not suitable to use conversions from metric to customary or the reverse in this indicator. Units appropriate include grams, meters, liters, Celcius, inches, feet, yards, miles, ounces, pounds, pints, quarts, gallons, Fahrenheit, seconds, minutes, hours, days, weeks or months. Prefixes such as milli-, centi- and kilo- are suitable for inclusion.

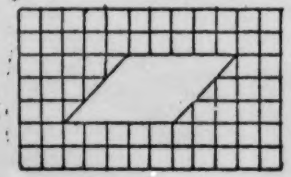
INDICATOR CLUSTER 17: THE STUDENT APPLIES CUSTOMARY OR METRIC UNITS OF MEASUREMENT TO DETERMINE LENGTH, AREA, VOLUME, WEIGHT, TIME, AND TEMPERATURE. (weight, 14%)

Assessment Characteristics: Non-standard units of measurement can be used in the assessment of this cluster. It specifically involves presenting a measurement scale and having the student identify or apply it. Conversion from metric to customary or the reverse is not appropriate; however, conversion within a system of measurement can be included. Units appropriate include grams, meters, liters, Celcius, inches, feet, yards, miles, ounces, pounds, pints, quarts, gallons, Fahrenheit, seconds, minutes, hours, days, weeks or months. Prefixes such as milli-, centi- and kilo- are suitable for inclusion.

INDICATOR CLUSTER 16: If you wanted to measure the amount of water a bathtub could hold, what unit of measurement would you use?

A. gram
B. liter
C. meter
D. kilogram

INDICATOR CLUSTER 17: How many square units is the shaded region?



INDICATOR CLUSTER 18: THE STUDENT ESTIMATES NUMBERS (RESULTS) USING ROUND NUMBERS, WITH OR WITHOUT UNITS OF MEASUREMENT. (weight, 2%)

Assessment Characteristics: The objective of this cluster is specifically to assess the student's ability to estimate a result. A non-standard unit of measurement can be used to ask the student to estimate the number of units contained in a drawing in practical settings.

INDICATOR CLUSTER 19: THE STUDENT DETERMINES AMOUNTS OF MONEY. (weight, 2%)

Assessment Characteristics: The assessment of this cluster can include making change by counting or by subtracting, as well as determining the least number of coins. Computation can be involved, as well as simply showing an amount of money. Exclude the use of half dollars, silver dollars or two-dollar bills.

Geometry

INDICATOR CLUSTER 20: THE STUDENT IDENTIFIES SETS OF POINTS USING STANDARD NAMES. (weight, 2%)

Assessment Characteristics: Sets of points in the assessment of this cluster may include identification of the circle, triangle, rectangle, point, line, plane, parallelogram, cone, sphere, cylinder, pyramid and cube.

INDICATOR CLUSTER 18: Which problem would be the closest to the results of

$$\begin{array}{r} 680 \\ \times 20 \\ \hline \end{array}$$

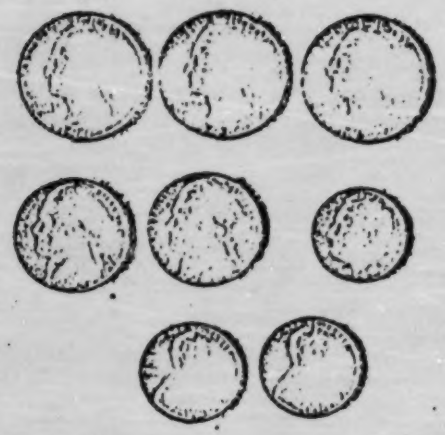
A. $\begin{array}{r} 675 \\ \times 15 \\ \hline \end{array}$

B. $\begin{array}{r} 682 \\ \times 22 \\ \hline \end{array}$

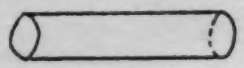
C. $\begin{array}{r} 685 \\ \times 25 \\ \hline \end{array}$

D. $\begin{array}{r} 690 \\ \times 20 \\ \hline \end{array}$

INDICATOR CLUSTER 19: How much money is shown?



INDICATOR CLUSTER 20: Which is the name of the shape shown below?

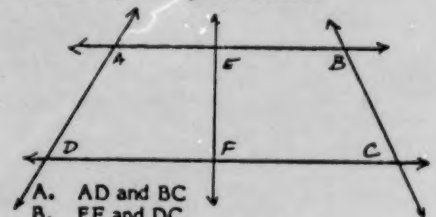


A. cone
B. prism
C. sphere
D. cylinder

INDICATOR CLUSTER 21: THE STUDENT IDENTIFIES GEOMETRIC RELATIONS AND PROPERTIES. (weight, 5%)

Assessment Characteristics: Geometric relations and properties to be identified in this cluster may include: parallel, perpendicular, similar, congruents, vertical and horizontal. The concepts of congruent and similar are to be measured and are not to be presented as vocabulary items. Additionally, degrees in a right angle, triangle, circle and rectangle are included.

INDICATOR CLUSTER 21: Name a pair of parallel lines.

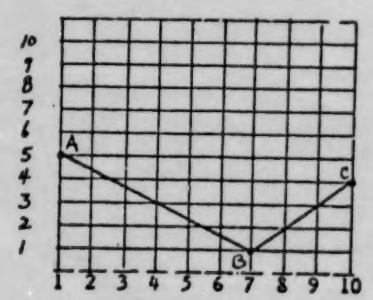


A. AD and BC
B. EF and DC
C. AB and DC
D. EF and BC

INDICATOR CLUSTER 22: THE STUDENT IDENTIFIES POINTS ON CARTESIAN COORDINATES. (weight, 2%)

Assessment Characteristics: The assessment of this cluster includes finding the coordinates of a point. An appropriate strategy for cluster measurement may be the use of a street map.

INDICATOR CLUSTER 22: A, B and C are vertices of a rectangle. Use the graph below to help you find the coordinates of D so that quadrilateral ABCD is a rectangle.



BASIC SKILLS TEST: PROBLEM SOLVING

INDICATOR CLUSTERS AND SAMPLE TEST ITEMS

INDICATOR CLUSTER		SAMPLE TEST ITEMS
COMPONENT SKILLS		
INDICATOR CLUSTER 1: THE STUDENT DISTINGUISHES BETWEEN FACT AND OPINION. (See Reading 1)		INDICATOR CLUSTER 1: Which of the following statements about a fire reported in a newspaper is an opinion? A. A fireman was injured fighting the blaze. B. The exact cause of the fire is unknown. C. The top five stories of the building were destroyed. D. The building needs to be renovated immediately.
Assessment Characteristics:	This cluster is assessed with such materials as editorials, books, movies and news reports. Terms must present a problem context. Minimal prior information (i.e., information other than that presented in the stem or associated stimulus material) should be required for correct responding. Statements of values are not considered facts.	
INDICATOR CLUSTER 2: THE STUDENT RECOGNIZES MAIN IDEAS, DETAILS, SEQUENCES OF EVENTS AND CAUSE AND EFFECT RELATIONSHIPS. (See Reading 3 & 7)		INDICATOR CLUSTER 2: A survey of the automobile industry indicated a very sharp decline in the sale of some of the cars. Most of these are of the larger types. As much as 34% decline has been noted in some makes. Since fewer cars are being purchased, auto workers will A. drive less. B. find fewer jobs available. C. make more money. D. go on strike.
Assessment Characteristics:	Includes explicit or implicit statement of ideas, details, sequences and relationships. Correct responding may require prior knowledge; however, answer must be dependent on item stimulus material. The details of events selected for item content must be necessary or relevant to overall comprehension of the problem situation. Items requiring identification of appropriate statement of a problem are included in this cluster.	
INDICATOR CLUSTER 3: THE STUDENT RECOGNIZES APPROPRIATE REFERENCE SOURCES. (See Reading 12)		INDICATOR CLUSTER 3: If you needed to find information about purchasing new tires for your car, where would you most likely look for information? A. telephone directory B. encyclopedia C. atlas D. almanac
Assessment Characteristics:	This cluster assesses the student's ability to identify various reference sources such as a card catalog, an encyclopedia, types of directories and general library skills. Also included are yellow pages, classified ads, recipes/cook books and instructional manuals. Some items should focus on why one source is more appropriate than another for a specific task. Items preferably should emphasize the use of non-academic reference sources.	

INDICATOR CLUSTER 4: THE STUDENT LOCATES INFORMATION IN REFERENCE MATAERIALS. (See Reading 13)

Assessment Characteristics: This cluster assesses the student's ability to use various sources of information, including library reference materials. Items requiring use of cross-references, multiple-step search strategies, and recognition of various classification schemes are included in this cluster.

INDICATOR CLUSTER 4:

Oil, 29, 30
Oxygen, 11.
  importance to plants, 15
  importance in breathing, 15
  amount in air, 13
Particulates, 74-76
Pesticides, 23, 65
Philadelphia, 46
Plants
  crop damage, 51, 52, 53, 54, 55,
  forests, 10, 46-49, 51
  importance of oxygen, 15
Public Law #91, 63-64
Smoke, 36, 37, 39. See also Particulates
Smoking, 46-47, 48, 60.
Soot, see Particulates
Sunlight, 25, 31
Tests to measure pollution, 19, 55, 59, 61, 69-73
Trucks, see Automobiles and trucks

On the evening news each day, a "pollution count" is given as part of the regular weather report. If you were not familiar with what "pollution count" meant and wanted to know what it measured, to which pages in this book might you refer?

A. 11, 15
B. 46-47
C. 69-73
D. 74-76

INDICATOR CLUSTER 5: THE STUDENT ESTIMATES OUTCOMES, WITH OR WITHOUT UNITS OR MEASUREMENT. (See Math 18)

Assessment Characteristics: The objective of this cluster is specifically to assess a student's ability to estimate a result. Appropriate items include use of estimation in planning stages of problem solving as well as items asking which of several problem-solving methods gives the best estimate of quantity or other result. Items requiring identification of alternative solution strategies and items requiring value judgments about the appropriateness of alternative solution strategies are included.

INDICATOR CLUSTER 5: The Math Club at Center High School filled a five-gallon jar with beans. All the students were asked to guess how many beans were in the jar. A prize will be given to the person whose guess is closest to the actual number of beans in the jar. Which method best estimates the number of beans in the jar?

A. Count the number of beans around the outside of the jar and then multiply by the number of beans from the top to the bottom of the jar.

B. Count the number of beans in a cup and then multiply by the number of cups in five gallons.

C. Measure the size of a bean and then multiply by the area of the jar.

D. Weigh the jar, weigh a bean, and then multiply by the weight of a bean.

INDICATOR CLUSTER 6: THE STUDENT DRAWS CONCLUSIONS. (See Reading 9)

Assessment Characteristics: Conclusions are considered the result of a deductive or inductive reasoning process. The conclusions may act as a summary statement, account for a synthesis of the information or bring closure to the passage. In most cases, multiple pieces of information on which to base a conclusion are included in the passage. Items requiring identification of valid conclusions are appropriate for this cluster. Where conclusions involve predictions, generalizations, or comparisons, these must be stated in the item stem or associated stimulus material. Also appropriate are items requiring the student to identify or state a problem or question to be resolved. This indicator may be assessed in the context of free-response items.

Data Fluency

INDICATOR CLUSTER 7: THE STUDENT INTERPRETS NON-GRAPHIC INSTRUCTION, LABELS, FORMS, AND APPLICATIONS. (See Reading 10)

Assessment Characteristics: The emphasis of this cluster is application rather than terminology. Items represented are actual forms or other information presented in practical situations. Item content may include transportation, occupational, and career information.

INDICATOR CLUSTER 6: The effects of alcohol last for several hours. can be dangerous to drive after drinking larg amounts of alcohol. Muscular response reduced and judgment may be impaired.

Which of the following could you conclude fro this passage?

A. Alcohol speeds up reaction time.
B. Alcohol may cause spontaneou behavior.
C. Alcohol may increase chance of a accident.
D. Alcohol has no side-effects.

INDICATOR CLUSTER 7: Jessie's teacher provided this format fo bibliographic information:

Lee Snelling, Studying Clouds, Jones and Smith Publishing Company, 1980.

Which of the following sets of bibliographic information is incomplete according to the teacher's model?

A.
Lois Murphy, Clouds and Rain, Science Associates Press, 1972.

B.
Kirk Nelms, The Science of Weather, illustrated by Bonnie Nelms, Boone Publishing Co., 1932.

C.
Betty Coleman, Controlling Weather, U. S. Government Printing Office.

D.
Rex Green, Learning to Read the Clouds, University Press, 1964.

INDICATOR CLUSTER 8: THE STUDENT RECOGNIZES RELEVANCE OF DATA. (See Reading 11)

Assessment Characteristics: Items pertaining to this cluster must require the student to identify relevant or irrelevant pieces of information for a specific problem situation and set of resolution criteria. Particularly, the student will identify what further piece(s) of information may be necessary to respond to a task or question or identify unnecessary information which may cause confusion or be extraneous to the situation.

INDICATOR CLUSTER 9: THE STUDENT ORGANIZES DATA INTO TABLES, CHARTS, AND GRAPHS. (See Math 14)

Assessment Characteristics: Assessment problems in this cluster involve the selection of the appropriate representation of data for a specific purpose or set of resolution criteria. Items may also require construction of decision tables or flow charts. Content of items may include labeling, transportation, career and occupational information. Items should focus on the organization of data in order to facilitate problem solution. This indicator may be assessed in the context of free-response items.

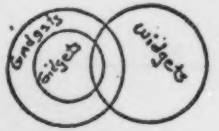
INDICATOR CLUSTER 8: Jill wants to carpet her kitchen. Which set of facts will help her make the best decision for the amount of carpet needed?

A. Area of kitchen
B. Shape and size of kitchen, width of carpet
C. Length and width of kitchen, width of carpet
D. Length of kitchen and length of carpet

INDICATOR CLUSTER 9: All gidgets are gadgets. Some widgets are gadgets. No widgets are gidgets. Which diagram shows these statements?

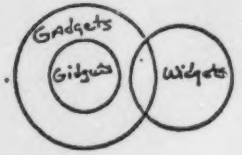
A.

B.



C.

D.



INDICATOR CLUSTER 10: THE STUDENT INTERPRETS DATA IN THE FORM OF TABLES, CHARTS, AND GRAPHS. (See Math 15)

Assessment Characteristics: Items should require a student to identify a relationship or rule from the presented material. Formats wherein data can be interpreted may include circle graphs, bar graphs, line graphs and pictographs. Items requiring the use of decision tables and flow charts are appropriate. Items may include labeling, transportation, career and occupational information.

INDICATOR CLUSTER 10:

HIGHWAY MILEAGE

	Atlanta	Augusta	Bainbridge	Columbus	LaGrange	Macon	Savannah	Tifton	Valdosta
Americus	134	194	95	61	104	72	206	73	118
Athens	66	101	257	167	131	92	214	202	247
Atlanta	0	157	231	109	65	84	256	183	234
Bainbridge	231	267	0	124	167	164	245	84	80
Brunswick	274	189	198	255	268	189	78	129	116
Carrollton	49	206	209	85	41	115	288	204	251
Columbus	109	217	124	0	44	93	252	128	166
Cordele	144	170	97	93	136	67	174	41	88
Dahlonega	71	161	303	180	136	141	313	254	301

Yolanda, who lives in Brunswick, is planning a trip for this weekend and will be back for work Monday morning. Her car can be driven about 270 miles on a tank of gasoline. Many gas stations will be closed during the weekend, so Yolanda is not planning to purchase gasoline while on her trip.

Which is the farthest city she will be able to visit?

A. Atlanta
B. Columbus
C. LaGrange
D. Tifton

Model Application

INDICATOR CLUSTER 11: THE STUDENT MAKES PREDICTIONS, GENERALIZATIONS AND COMPARISONS. (See Reading 8)

Assessment Characteristics: Prediction implies a future event; a degree of probability exists. Generalizations are the result of inductive reasoning; specifics or details are presented from which the general statement is derived. Deduction may be involved as well. Comparisons are made based on some defined variable which is constant for that comparison and should be required with respect to some specific criteria. Items may entail explicit or implicit problem resolution criteria. This indicator may be assessed in the context of free-response items.

INDICATOR CLUSTER 11: Marie wants to buy a new car — either a Stallion or an AM Shark. She must choose the car which is least extensive to maintain. Her brother Luke is an auto mechanic. Which of the following comments from Luke would help Marie decide which car would probably have the lower maintenance expenses?

A. "Both of those cars are well constructed. I know you'd like either one. You'll have to decide which one you want to drive."
B. "The AM Shark costs a little more than the Stallion, but I have had to do less repair work on it than the Stallion. My customers say it drives well."
C. "The AM Shark costs more than the Stallion. Both of them drive well and you would enjoy either one."
D. "The AM Shark is really better looking and has cleaner lines. The Stallion isn't bad looking, though. You need to decide if you can spend extra money on looks."

INDICATOR CLUSTER 12: THE STUDENT SOLVES SIMPLE WORD PROBLEMS. (See Math 22)

Assessment Characteristics: Problem solutions may involve several operations performed in a specified or implied sequence. Solutions may require responses for which there are no readily apparent response cues in the item stem or associated stimulus material (e.g., common knowledge responses). Some items may require value judgments about the appropriateness of alternative solution strategies. Solutions are not necessarily numerical results.

INDICATOR CLUSTER 12: Mary, Bill, Elaine and Jeff are members of the Heathens rock band.

The keyboard player is a boy.
The guitar and bass players sing.
Bill doesn't play the drums.
The guitar player is a girl.
Jeff and Elaine do not sing.

Who plays the drums?

A. Bill
B. Martha
C. Jeff
D. Mary

APPENDIX B

CORRESPONDENCE OF BASIC SKILLS READING INDICATOR CLUSTERS TO GCRT OBJECTIVES AND HOUGHTON MIFFLIN READING SERIES

Indicator Cluster 1: The student distinguishes between fact and opinion.

Correspondence to GCRT

Grade 4 Objective 13: Reads short selections and identifies which statements are facts and which express the writer's opinion.

1980 Percent Mastery	
Atlanta	Georgia
47	68

Grade 8 Objective 11: Reads newspaper articles and advertisements and determines which statements are facts and which are the author's opinion or preference.

1980 Percent Mastery	
Atlanta	Georgia
58	75

Grade 10 Objective 3: Distinguishes between fact, opinion, assumption, definition, and value.

1980 Percent Mastery	
Atlanta	Georgia
27	44

Basal Introduction

Distinguishing between statements of fact and of opinion.

Grade 4, pp. 294-299, 265-269; Grade 5, pp. 95-96, 115-116; Grade 6, pp. 89-91, 111; Grade 7, pp. 56-57, 72-73; Grade 8, pp. 93-94, 109-110

Evaluating statements of opinion.

Grade 5, pp. 97-98, 116; Grade 6, pp. 91-92, 111-112; Grade 7, pp. 189-191, 193-194, 203-205; Grade 8, pp. 169-171, 175-176, 185-186

Indicator Cluster 2: The student interprets semantic relationships.

Correspondence to GCRT

Grade 10 Objective 11: Uses a variety of word analysis skills and strategies to determine the meaning of unfamiliar words.

1980 Percent Mastery	
Atlanta	Georgia
73	84

Basal Introduction

Choosing the right meaning of a familiar multi-meaning word.

Grade 1, pp. 192-194, 324-325, 328-329, 348-350; Grade 1, pp. 113-114, 202-203, 314, 325-326, 330-331, 416-417; Grade 2, pp. 40-41, 45-46, 68-69, 92, 107, 168-169, 171-172, 219, 229-229, 288, 303, 335-336, 351, 366-367, 438; Grade 2, pp. 51-52, 68-69, 192-193, 195-196, 284-285, 331-332, 343-344, 399-400, 409-410, 418-419; Grade 3, pp. 12-13, 112-113; Grade 3, 15-16; Grade 4, pp. 34-35, 60-61; Grade 7, pp. 16-17, 27-28; Grade 8, pp. 42-49

Getting the meaning of a familiar word with an unfamiliar meaning.

Grade 3, pp. 62-63, 77-79, 93-96, 154; Grade 3, pp. 27-28, 192-193; Grade 4, pp. 34-35, 60-61; Grade 5, pp. 63-66, 48-52; Grade 6, pp. 34-35, 54-55, Grade 7, pp. 13-14, 16-17, 27-28; Grade 8, pp. 42-49

Getting the meaning of an unfamiliar word.

Grade 3, pp. 93-96, 77-79, 135, 236-237, 282; Grade 3, pp. 45-46, 119-120, 151-152, 204-205, 282-283, 301-302; Grade 4, pp. 36-37, 61, 221-222, 244-245; Grade 5, pp. 48-52, 63-66, 189-190, 211-212; Grade 6, pp. 34-35, 54-55, 265; Grade 7, pp. 13-14, 16-17, 27-28; Grade 8, pp. 42-49

Indicator Cluster 3: The student recognizes explicitly-stated main ideas, details, sequences of events, and cause-and-effect relationships.

Correspondence to GCRT

Grade 4 Objective 12: Reads short selections and identifies the main idea and supporting details.

1980 Percent Mastery	
Atlanta	Georgia
55	73

Grade 4 Objective 19: Reads and comprehends a simple passage and draws conclusions, recognizes cause and effect relationships and/or the sequence of events.

1980 Percent Mastery	
Atlanta	Georgia
62	79

Grade 8 Objective 10: Reads a selection and distinguishes between main idea and supporting details.

1980 Percent Mastery	
Atlanta	Georgia
85	92

Grade 8 Objective 12: Reads a passage and determines the order in which the events occurred.

1980 Percent Mastery	
Atlanta	Georgia
77	89

Basal Introduction

Getting the main idea.

Grade 3, pp. 216-217, 299; Grade 3, pp. 64-65, 184; Grade 4, pp. 144-145, 163-164; Grade 5, pp. 154-155, 177-178; Grade 6, pp. 110-111, 127, 352; Grade 7, pp. 99-101, 102-103, 109-111; Grade 8, pp. 117-119, 122-123, 132

Noting correct sequence - order of events.

Grade PP, pp. 54-55, 58, 72, 112, 174; Grade PP, pp. 84-85, 88-89, 111, 273; Grade PP, pp. 282, 286-287, 324, 364-365; Grade P, pp. 48, 171, 232, 232, 275, 276, 279-280, 309-310, 368; Grade 1, pp. 15-16, 21-22, 58, 161-162, 259-260; Grade 2, pp. 44, 62, 179-180, 184, 321-322, 335, 426, 437-438; Grade 2, pp. 15, 31-32, 220-221, 225-226, 360, 374-375; Grade 3, pp. 28, 52-53; Grade 3, pp. 89, 173-174, 216; Grade 4, pp. 258-259, 281; Grade 5, pp. 227-229, 253-254; Grade 6, pp. 221-222, 245; Grade 7, pp. 236-238, 241-242, 252-253; Grade 8, pp. 183-185, 187-188, 198-199, 200-201

Noting correct sequence - clue words.

Grade 4, pp. 278-279, 300-301; Grade 5, pp. 271-272, 288-289; Grade 6, 261-262, 276-277; Grade 7, pp. 238-239, 243, 253-254; Grade 8, pp. 198-199, 201-203, 211-212

Drawing conclusions and inferences and making generalizations.

Grade PP, pp. 192, 195, 212, 220, 267; Grade PP, pp. 47, 147, 277; Grade PP, pp. 21, 25-26, 85, 286; Grade P, pp. 14, 78, 143, 201, 228-229, 232, 263, 327-328; Grade 1, pp. 54-55, 59-60, 92, 191, 293-294, 400; Grade 2, pp. 13, 28, 118-119,

122, 183, 200, 396, 406; Grade 2, pp. 103-104, 108-109, 151-152, 165, 303, 316-317; Grade 3, pp. 74-75, 110-111, 180-181, 275; Grade 3, pp. 128-129, 309-310; Grade 4, pp. 192-195, 167-171; Grade 5, pp. 249-250, 274-275; Grade 6, pp. 242-243, 263-264; Grade 7, students apply this skill in many discussion questions; pp. 174-176, 181-182, 192-193; Grade 8, students apply this skill in many discussion questions, pp. 139-140, 145-146, 162-163

(See also Teacher's Guide "Reading and Discussing" sections at every level.)

Using direct and/or indirect experiences to get implied meanings.

Grade 7, students apply this skill in many discussion questions; Grade 8, students apply this skill in many discussion questions.

(This skill is given extensive practice in the Teacher's Guide "Reading and Discussing" sections at every level.)

Indicator Cluster 4: The student follows directions.

Correspondence to GCRT: None

Basal Introduction

Following directions.

Grade P, pp. 244-245, 248-249, 278, 355-356; Grade 1, pp. 41, 147-148, 242-243, 329, 341-342, 346-347, 437; Grade 2, pp. 162-163, 121, 136-137, 254-256, 259-260, 282-283, 287-288, 303, 436-437; Grade 2, pp. 52-53, 48-49, 53-54, 86-87, 107, 122, 269-270, 285-286; Grade 3, pp. 101, 143-144; Grade 3, pp. 66-67, 86-87; Grade 4, pp. 74-75, 222-223; Grade 5, pp. 226-227, 252-253; Grade 6, pp. 220-221, 244-245, 295; Grade 7, pp. 129, 131, 134-135, 141-142; Grade 8, pp. 140-142, 146-148, 163-164

Indicator Cluster 5: The student interprets figurative langauge.

Correspondence to GCRT

Grade 8 Objective 15: Reads simple poems and recognizes the objective (literal) and implied (figurative) meanings of statements.

1980 Percent Mastery	
Atlanta	Georgia
78	88

Grade 10 Objective 5: Recognizes various modes of expression such as irony, sarcasm, and understands their effects.

1980 Percent Mastery	
Atlanta	Georgia
66	82

Basal Introduction

Getting the meanings of similes.

Grade 3, pp. 305-306, 316; Grade 3, pp. 41-45, 253, 277, 284; Grade 4, pp. 240-241, 261-263; Grade 5, pp. 207-208, 229-230; Grade 6, pp. 200-201, 222-223, 245-246; Grade 7, pp. 150-152, 155-156, 165-166; Grade 8, pp. 542-549, 13-14, 402-404

Getting the meanings of metaphors.

Grade 3, pp. 305-306, 316; Grade 3, pp. 92-98, 253, 277, 284; Grade 4, pp. 242-243, 263-264; Grade 5, pp. 209-210, 230-231; Grade 6, pp. 202-201, 222-223, 245-246; Grade 7, pp. 152-153, 156, 166-167; Grade 8, pp. 542-549, 402-404

Getting the meanings of personifications.

Grade 3, p. 284; Grade 5, pp. 272-273, 289-290; Grade 6, pp. 202-203, 224, 246-247; Grade 7, pp. 297-298, 300-301, 314-315; Grade 8, pp. 326-328, 331, 342-343

Using context to get meanings of idioms.

Grade 3, pp. 305-306, 316; Grade 3, pp. 126-127, 144-145, 284; Grade 4, pp. 339-340, 356-357; Grade 5, pp. 347-348, 369-370; Grade 6, pp. 306-307, 328; Grade 7, pp. 288-289, 292, 299-300; Grade 8, pp. 42-49, 265-267, 270-271, 279-281

Indicator Cluster 6: The student recognizes propaganda techniques.

Correspondence to GCRT: None

Basal Introduction

Recognizing propaganda techniques

Grade 6, pp. 362-368, 312-316; Grade 7, pp. 309-312, 315-316, 327-328; Grade 8, pp. 289-291, 293-295, 303-305

Indicator Cluster 7: The student recognizes implicitly-stated main ideas, details, sequences of events, and cause-and-effect relationships.

Correspondence to GCRT

Grade 10 Objective 1: Grasps the meaning of a communication in the absence of a plain statement.

1980 Percent Mastery	
Atlanta	Georgia
58	74

Grade 10 Objective 4: Determines the purpose of a particular communication.

1980 Percent Mastery	
Atlanta	Georgia
42	58

Basal Introduction

Using direct and/or indirect experiences to get implied meanings.

Grade 7, students apply this skill in many discussion questions; Grade 8, students apply this skill in many discussion questions.

(This skill is given extensive practice in the Teacher's Guide "Reading and Discussing" sections at every level.)

Getting the main idea.

Grade 3, pp. 216-217, 299; Grade 3, pp. 64-65, 184; Grade 4, pp. 144-145, 163-164; Grade 5, pp. 154-155, 177-178; Grade 6, pp. 110-111, 127, 352; Grade 7, pp. 99-103, 109-110; Grade 8, pp. 117-119, 122-123, 132

Understanding cause — effect relationships.

Grade 4, pp. 260-261, 281-283; Grade 5, pp. 251-252, 275-276; Grade 6, pp. 243-244, 264-265; Grade 7, pp. 163-164, 168, 179-180; Grade 8, pp. 208-209, 212-213, 222-223

Indicator Cluster 8: The student makes predictions, generalizations, and comparisons.

Correspondence to GCRT

Grade 10 Objective 9: Predicts the logical outcome of a series of events.

1980 Percent Mastery	
Atlanta	Georgia
44	61

Basal Introduction

Anticipating and predicting outcomes.

Grade 3, pp. 110-111, 180-181; Grade 3, pp. 128-129, 309-310; Grade 4, pp. 314-315, 341-342; Grade 5, pp. 307-309, 327-328; Grade 6, pp. 292-293, 307-308; Grade 7, pp. 263-264, 268-270, 278-279; Grade 8, pp. 241-243, 247-248, 259-260

(See also Teacher's Guide "Reading and Discussing" sections, Levels B-J.)

Drawing conclusions and inferences and making generalizations.

Grade PP, pp. 192, 195, 212, 220, 267; Grade PP, pp. 47, 147, 277; Grade PP, pp. 21, 25-26, 85, 286; Grade P, pp. 14, 78, 143, 201, 228-229, 232, 263, 327-328; Grade 1, pp. 54-55, 59-60, 92, 191, 293-294, 400; Grade 2, pp. 13, 28, 118-119, 122, 183, 200, 396, 406; Grade 2, pp. 103-104, 108-109, 151-152, 165, 303, 316-317; Grade 3, pp. 74-75, 110-111, 180-181, 275; Grade 3, pp. 128-129, 309-310; Grade 4, pp. 192-195, 167-171; Grade 5, pp. 249-250, 274-275; Grade 6, pp. 242-243, 263-264; Grade 7, students apply this skill in many discussion questions, pp. 174-176, 181-182, 192-193; Grade 8, students apply this skill in many discussion questions, pp. 139-140, 145-146, 162-163

(See also Teacher's Guide "Reading and Discussing" sections at every level.)

Indicator Cluster 9: The student draws conclusions.

Correspondence to GCRT

Grade 4 Objective 19 (partial): Reads and comprehends a simple passage and draws conclusions.

1980 Percent Mastery	
Atlanta	Georgia
62	79

Grade 10 Objective 8: Draws logical conclusions from the evidence presented in a communication.

1980 Percent Mastery	
Atlanta	Georgia
76	87

Basal Introduction

Drawing conclusions and inferences and making generalizations.

Grade PP, pp. 192, 195, 212, 220, 267; Grade PP, pp. 47,147, 277; Grade PP, pp. 21, 25-26, 85, 286; Grade P, pp. 14, 78, 143, 201, 228-229, 232, 263, 327-328; Grade 1, pp. 54-55, 59-60, 92, 191, 293-294, 400; Grade 2, pp. 13, 28, 118-119, 122, 183, 200, 396, 406; Grade 2, pp. 103-104, 108-109, 151-152, 165, 303, 316-317; Grade 3, pp. 74-75, 110-111, 180-181, 275; Grade 3, pp. 128-129, 309-310; Grade 4, pp. 192-195, 167-171; Grade 5, pp. 249-250, 274-275; Grade 6, pp. 242-243, 263-264; Grade 7, students apply this skill in many discussion questions; 174-176, 181-182, 192-193; Grade 8, students apply this skill in many discussion questions; pp. 139-140, 145-146, 162-163

Anticipating and predicting outcomes.

Grade 3, pp. 110-111, 180-181; Grade 3, pp. 128-129, 309-310; Grade 4, pp. 314-315, 341-342; Grade 5, pp. 307-309, 327-328; Grade 6, pp. 292-293, 307-308; Grade 7, pp. 263-264, 268-270, 278-279; Grade 8, pp. 241-243, 247-248, 259-260

Indicator Cluster 10: The student interprets graphic information, instructions and labeling information, forms and application, transportation information, and occupational and career information.

Correspondence to CGRT

Grade 10 Objective 14 (partial): Knows how to use maps, graphs, charts, tables.

1980 Percent Mastery	
Atlanta	Georgia
41	60

Basal Introduction

Reading a picture map.

Grade 1, pp. 38-34, 66-69; Grade 2, pp. PB; Grade 2, pp. PB; Grade 4, pp. 296-298, 316-317

Reading a political map.

Grade 5, pp. 408-413, 352-356; Grade 6, pp. 274-275, 293-294; Grade 7, pp. 232-239, 145-146, PB; Grade 8, pp. 276-278, 281-283, 292

Reading a physical map.

Grade 5, pp. 408-413, 352-356; Grade 6, pp. 274-275, 293-294; Grade 7, pp. 232-239, 145-146

Reading a products map.

Grade 7, pp. 232-239, 145-146

Reading a table.

Grade 5, pp. 382-388, 332-336; Grade 6, pp. 185-186, 204-205; Grade 7, pp. 173-174, 180-181, 192; Grade 8, pp. 462-469, 348-350

Reading a pictograph.

Grade 6, pp. 384-391, 330-335; Grade 8, pp. 377-384, 284-285

Reading a circle graph.

Grade 6, pp. 384-391, 330-335; Grade 8, pp. 377-384, 284-285

Reading a bar graph.

Grade 6, pp. 384-391, 330-335; Grade 7, pp. 324-325, 330-331, 342-343; Grade 8, pp. 377-384, 284-285

Reading a line graph.

Grade 7, pp. 384-391, 330-335; Grade 8, pp. 377-384, 284-285

Reading a diagram.

Grade 4, pp. 298-299, 375-376; Grade 5, pp. 285-287, 310; Grade 6, pp. 275-276, 294-295; Grade 7, pp. 321-327, 219-221; Grade 8, pp. 238-240, 245-247, 258-259

Reading a time line.

Grade 7, pp. 373-374, 378-379, 379-381; Grade 8, pp. 394-396, 399-400, 410-411

Understanding the use of footnotes.

Grade 6, p. 156

Choosing appropriate reference aids.

Grade 5, pp. 365-366, 382-383; Grade 6, pp. 348-350, 367; Grade 7, pp. 359-360, 365, 376-377; Grade 8, pp. 171-173, 176-177, 187

Varying reading rate according to purpose.

Grade 6, pp. 475-480, 398-401; Grade 7, pp. 380-386, 256-258; Grade 8, pp. 382-384, 387-388, 398-399

Varying reading rate according to difficulty.

Grade 6, pp. 498-502, 415-418; Grade 7, pp. 380-386, 256-258

Using chapter headings and subheadings.

Grade 8, pp. 175-184, 150-153

Solving story problems in mathematics.

Grade 7, pp. 450-456, 303-305; Grade 8, pp. 299-302, 305-306, 316-317

Indicator Cluster 11: The student recognizes relevance of data.

Correspondence to GCRT

Grade 10 Objective 7: Performs simple information gathering and research tasks.

1980 Percent Mastery	
Atlanta	Georgia
62	80

Basal Introduction

Choosing key words(s).

Grade 4, pp. 252-256, 226-230; Grade 5, pp. 81-86, 69-73; Grade 6, pp. 64-70, 58-63; Grade 7, pp. 118-120, 123, 133-134; Grade 8, pp. 229-236, 190-192

Choosing main topics.

Grade 4, pp. 252-256, 226-230; Grade 5, pp. 81-86, 69-73; Grade 6, pp. 64-70, 58-63; Grade 7, pp. 118-120, 123, 133-134; Grade 8, pp. 229-236, 190-192

Choosing subtopics.

Grade 4, pp. 252-256, 226-230; Grade 5, pp. 82-86, 69-73; Grade 6, pp. 64-70, 58-63; Grade 7, pp. 118-120, 123, 133-134; Grade 8, pp. 229-236, 190-192

Indicator Cluster 12: The student recognizes appropriate reference resources.

Correspondence to GCRT

Grade 8 Objective 9: Demonstrates the ability to locate materials in a library.

1980 Percent Mastery	
Atlanta	Georgia
57	78

Grade 10 Objective 13: Knows how to use newspapers, TV, magazines, and other media to locate information.

1980 Percent Mastery	
Atlanta	Georgia
46	66

Basal Introduction

Choosing the correct volume.

Grade 4, pp. 356-361, 321-325; Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185, 203-204; Grade 7, pp. 160-163, 167, 178-179; Grade 8, pp. 92-98, 72-74

Using guide words.

Grade 4, pp. 356-361, 321-325; Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185; Grade 7, pp. 160-163, 167; Grade 8, pp. 92-98, 72-74

Using cross-reference.

Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185; Grade 7, pp. 160-163; Grade 8, pp. 92-98, 72-74

Choosing correct section headings.

Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185, 203-204; Grade 7, pp. 160-163, 167, 178-179; Grade 8, pp. 92-98, 72-74

Choosing correct file drawers.

Grade 5, pp. 262-267, 232-236; Grade 6, pp. 47-53, 41-45; Grade 7, pp. 88-95, 64-66; Grade 8, pp. 78-80, 85-87, 95-96

Choosing correct file cards — authors, title, and subject.

Grade 5, pp. 262-267, 232-236; Grade 6, pp. 47-53, 41-45; Grade 7, pp. 88-95, 64-66; Grade 8, pp. 78-80, 85-87, 95-96

Using call numbers to locate books.

Grade 6, pp. 47-53, 41-45; Grade 7, pp. 88-95, 64-66

Choosing appropriate reference aids.

Grade 5, pp. 365-366, 382-383; Grade 6, pp. 348-350, 367; Grade 7, pp. 359-360, 365, 376-377; Grade 8, pp. 171-173, 176-177, 187

Indicator Cluster 13: The student locates information in reference materials.

Correspondence to GCRT

Grade 8 Objective 7: Uses a dictionary for selecting appropriate word's meaning, finding synonyms, and finding antonyms.

1980 Percent Mastery	
Atlanta	Georgia
74	87

Grade 8 Objective 8: Uses the table of contents and the index to locate specific information in a textbook or a reference book.

1980 Percent Mastery	
Atlanta	Georgia
85	92

Grade 10 Objective 12: Uses conventional rules of organization to locate information in dictionaries, phone books, encyclopedias, table of contents, indices.

1980 Per cent Mastery	
Atlanta	Georgia
46	63

Basal Introduction

Using alphabetical order.

Grade 2, pp. 64-66, 71-72, 76, 107-108, 116-117, 196-197, 202, 257-258, 351, 428-429; Grade 2, pp. 226-227, 212-213, 234-235, 238-239, 317, 326-327; Grade 3, pp. 92-93, 144-145; Grade 3, pp. 16, 120

Locating words — front, middle, and back.

Grade 3, pp. 176-181, 149-152; Grade 3, pp. PB; Grade 4, pp. 42-47, 40-45; Grade 5, pp.,41-42, 64; Grade 6, pp. 36-37, 75-76; Grade 7, pp. 38-45, 31-33

Using guide words.

Grade 3, pp. 176-181, 149-152, 181, 219, 265; Grade 3, pp. 12-14, 28, 77, 145, 226-227, 312; Grade 4, pp. 42-47, 40-45; Grade 5, pp. 41-42, 64; Grade 6, pp. 36-37, 75-76; Grade 7, pp. 38-45, 31-33

Using a table of contents.

Grade 4, pp. 73-74, 95-96; Grade 5, pp. 82-83, 98; Grade 6, pp. 72-73, 93-94; Grade 7, pp. 117-178, 122-123, 132-133; Grade 8, pp. 229-236, 190-192

Choosing key words(s).

Grade 4, pp. 356-361, 321-325; Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185, 203, 204; Grade 7, pp. 160-163, 178-179; Grade 8, pp. 92-98, 72-74

Choosing the correct volume.

Grade 4, pp. 356-361, 321-325; Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185, 203-204; Grade 7, pp. 160-163, 167, 178-179; Grade 8, pp. 92-98, 72-74

Using guide words.

Grade 4, pp. 356-361, 321-325; Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185; Grade 7, pp. 160-163, 167; Grade 8, pp. 92-98, 72-74

Using cross-references.

Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185; Grade 7, pp. 160-163; Grade 8, pp. 92-98, 72-74

Choosing correct section headings.

Grade 5, pp. 188-193, 160-164; Grade 6, pp. 183-185, 203-204; Grade 7, pp. 160-163, 167, 178-179; Grade 8, pp. 92-98, 72-74

APPENDIX C

CORRESPONDENCE OF BASIC SKILLS MATHEMATICS INDICATOR CLUSTERS TO GCRT OBJECTIVES AND HOLT MATHEMATICS SERIES

Indicator Cluster 1: The student translates from words to numerals and the reverse.

Correspondence to GCRT:

Grade 4 Objective 3: Reads and writes names of numbers up through one million.

1980 Percent Mastery	
Atlanta	Georgia
35	58

Basal Introduction

Reading and writing numerals through hundred millions

Grade 4, pp. 8-17

Reading and writing numerals through hundred billions

Grade 5, pp. 24-30

Reading and writing numerals through hundred trillions

Grade 6, pp. 2-3; Grade 7, pp. vi-1

Reading and writing decimal numerals through thousandths

Grade 5, pp. 272-279

Reading and writing decimals through ten-thousandths

Grade 6, pp. 210-213

Reading and writing decimal numerals through hundred-thousandths

Grade 7, pp. 188-190

Indicator Cluster 2: The student orders fractions, decimals, or percents.

Correspondence to GCRT: None

Basal Introduction

Comparing fractions

Grade 2, pp. 105-106; Grade 3, pp. 268, 272-273; Grade 4, pp. 232-235, 253; Grade 5, pp. 226-227; Grade 6, pp. 158-159; Grade 7, pp. 148-149; Grade 8, pp. 214-215

Comparing decimals

Grade 5, pp. 282-283; Grade 6, pp. 218-219; Grade 7, pp. 196-197; Grade 8, pp. 40-41

Indicator Cluster 3: The student translates from decimals to percents and the reverse.

Correspondence to GCRT:

GCRT Grade 8 Objective 6 (partial): Computes with simple and decimal fractions, integers, and percents.

1980 Percent Mastery	
Atlanta	Georgia
25	54

GCRT Grade 10 Objective 5: Understands numbers written as decimals, fractions, and percent and changes numbers from one form to the other.

1980 Percent Mastery	
Atlanta	Georgia
25	54

Basal Introduction

Percent (decimal to percent)

Grade 6, pp. 274-291; Grade 7, pp. 222-223

Interchanging fractions, decimals, and percents

Grade 6, pp. 276-277; Grade 7, pp. 193, 214-218, 220-221

Indicator Cluster 4: The students translates from fractions to percents and the reverse.

Correspondence to GCRT: Same as indicator cluster 3

Basal Introduction: Same as indicator cluster 3

Indicator Cluster 5: The student translates from fractions to decimals and the reverse.

Correspondence to GCRT: Same as indicator 3

Basal Introduction

Writing decimals for fractional numerals

Grade 5, p. 284

Changing from fraction to decimal form using division

Grade 6, pp. 220-221

Interchanging fractions, decimals, and percents

Grade 6, pp. 276-277; Grade 7, pp. 193, 214-218, 220-221

Indicator Cluster 6: The student selects appropriate operations for a given problem situation.

Correspondence to GCRT

Grade 4 Objective 4: Tells which arithmetic operation is appropriate to a given problem situation.

1980 Percent Mastery	
Atlanta	Georgia
73	87

Grade 8 Objective 4: Selects the arithmetic operation appropriate to the given situation or problem.

1980 Percent Mastery	
Atlanta	Georgia
38	59

Grade 10 Objective 1: Knows when to use addition, subtraction, multiplication and division.

1980 Percent Mastery	
Atlanta	Georgia
64	79

Basal Introduction

Writing number sentence to fit a problem

Grade 2, pp. 95, 109; Grade 3, pp. 58-59, 87; Grade 4, pp. 32-33, 133; Grade 5, pp. 46-47; Grade 6, pp. 56-57

Writing equations to fit problems

Grade 7, pp. 62-63

Writing equations for word sentences

Grade 8, pp. 164-165

Indicator Cluster 7: The student computes with whole numbers, fractions, decimals and percent.

Correspondence to GCRT

Grade 4 Objective 7: Adds and subtracts with numerals up to four digits (with regrouping).

1980 Percent Mastery	
Atlanta	Georgia
42	66

Grade 4 Objective 8: Multiplies a three-digit number by a one-digit number, and divides a three-digit number by a one-digit number (with or without remainder).

1980 Percent Mastery	
Atlanta	Georgia
58	76

Grade 8 Objective 6: Adds, subtracts, multiplies by three-digit numbers and divides by two-digit numbers; computes with simple and decimal fractions, integers, and percent.

1980 Percent Mastery	
Atlanta	Georgia
25	54

Grade 10 Objective 2: Adds or subtracts numbers written as decimals, mixed numbers, fractions, and percent.

1980 Percent Mastery	
Atlanta	Georgia
52	74

Grade 10 Objective 3: Multiplies numbers written as decimals, mixed numbers, fractions, and percents.

1980 Percent Mastery	
Atlanta	Georgia
43	60

Grade 10 Objective 4: Divides numbers written as decimals, mixed numbers, fractions, and percents.

1980 Percent Mastery	
Atlanta	Georgia
36	61

Basal Introduction

Addition of fractions, like and different denominators

Grade 4, pp. 248-249, 256-257; Grade 5, pp. 218-223; Grade 6, pp. 166-169; Grade 7, pp. 162-163; Grade 8, pp. 220-221

Subtraction of fraction, like and different demoninators

Grade 4, pp. 250-251, 258-259; Grade 5, pp. 224-225; Grade 6, pp. 170-171; Grade 7, pp. 166-167; Grade 8, pp. 224-225

Adding decimals

Grade 5, pp. 286-289; Grade 6, pp. 224-227; Grade 7, p. 201; Grade 8, pp. 52-53

Subtracting decimals

Grade 5, pp. 291-293; Grade 6, pp. 228-229; Grade 7, p. 202; Grade 8, pp. 52-53

Adding fractions and simplifying the sum

Grade 5, pp. 218-223

Subtracting fractions and simplifying the difference

Grade 5, pp. 224-225

Adding fractions

Grade 6, pp. 166-169; Grade 7, pp. 162-163; Grade 8, pp. 220-221

Subtracting fractions

Grade 6, pp. 170-171; Grade 7, pp. 166-167; Grade 8, pp. 224-225

Indicator Cluster 8: The student applies properties of operations.

Correspondence to GCRT

Grade 4 Objective 6: Applies and recognizes use of the properties of numbers and properties of operations without emphasis on the use of words.

1980 Percent Mastery	
Atlanta	Georgia
43	64

Indicator Cluster 9: The student solves simple word problems.

Correspondence to GCRT

Grade 10 Objective 6: Computes simple and compound interest on savings accounts, bonds, stocks and loans, and service charges on installment buying.

1980 Percent Mastery	
Atlanta	Georgia
49	67

Grade 10 Objective 7: Can compute sales tax, profit, discount, cost and selling price.

1980 Percent Mastery	
Atlanta	Georgia
25	44

Basal Introduction

Problem-solving applications

Careers

Grade 1, pp. 2, 38, 48, 101, 148, 183, 209, 239, 252, 271; Grade 2, pp. 9, 18, 46, 77, 99, 135, 161, 182, 207, 244, 267; Grade 3, pp. 5, 35, 67, 87, 131, 151, 181, 207, 235, 257, 269, 299; Grade 4, pp. 21, 45, 75, 90, 113, 133, 187, 217, 243, 271, 281, 311, 351; Grade 5, pp. 19, 45, 53, 123, 153, 177, 207, 228, 263, 280, 317, 348; Grade 6, pp. 11, 38, 54, 81, 123, 144, 172, 188, 241, 249, 288, 295, 340; Grade 7, pp. 27, 52, 69, 112, 119, 141, 185, 211, 219, 263, 297, 315, 325, 351, 381; Grade 8, pp. 27, 48, 55, 117, 149, 171, 199, 235, 263, 276, 313, 329, 359, 378

Consumer

Grade 1, pp. 211, 213, 230, 243; Grade 2, pp. 153, 156, 158, 183, 209, 273-274; Grade 3, pp. 100, 126, 205, 244, 261; Grade 4, pp. 97, 141, 288-289; Grade 5, pp. 59, 172, 192, 212-213, 268; Grade 6, pp. 68, 97, 161, 196, 223, 281, 286; Grade 7, pp. 12, 13, 157, 230, 232, 236, 260, 333; Grade 8, pp. 125, 143, 149, 184-185, 208, 245, 276, 286, 329

Problems on interest

Grade 6, p. 286

Problems on insurance

Grade 6, p. 288

Problems on recipes

Grade 7, p. 157

Problems on discount

Grade 7, p. 230

Problems on commission

Grade 7, p. 232

Indicator Cluster 10: The student applies proportions.

Correspondence to GCRT

Grade 8 Objective 3: Uses fractions or ratios.

1980 Percent Mastery	
Atlanta	Georgia
62	80

Basal Introduction

Scale drawing

Grade 5, pp. 300-301; Grade 6, pp. 316-317; Grade 7, pp. 280-281; Grade 8, pp. 302-303

Meaning of ratio

Grade 5, pp. 208-213

Ratio and proportion

Grade 6, pp. 198-201; Grade 8, pp. 232-234

Indicator Cluster 11: The student applies formulas.

Correspondence with GCRT

Grade 8 Objective 15: Applies standard measurement formulas such as perimeter and area of rectangle, triangle, circle; volume of a rectangular solid; time-ratio-distance.

1980 Percent Mastery	
Atlanta	Georgia
35	57

Basal Introduction

Perimeter

Grade 3, pp. 302-303; Grade 4, pp. 320-321; Grade 5, pp. 304-305; Grade 6, p. 292; Grade 7, p. 284; Grade 8, pp. 308-310

Area

Grade 3, pp. 304-305; Grade 4, pp. 322-325; Grade 5, pp. 308-311; Grade 6, pp. 293-299; Grade 7, pp. 285-287

Circle: circumference, area

...ade 6, pp. 301-305; Grade 7, pp. 290-293; Grade 8, pp. 309-311

Indicator Cluster 12: The student computes the mean and median.

Correspondence to GCRT

Grade 8 Objective 19: Identifies range, mean, median, and mode of given data; recognizes misuses of these terms in the interpretation of data.

1980 Percent Mastery	
Atlanta	Georgia
49	65

Grade 10 Objective 10: Computes the range, mean, median, or mode of data and uses these terms correctly in interpreting data.

1980 Percent Mastery	
Atlanta	Georgia
14	22

Basal Introduction

Mean, mode, median

Grade 7, pp. 370-371; Grade 8, pp. 375-377

Indicator Cluster 13: The student determines probabilities.

Correspondence to GCRT

Grade 8 Objective 20: Assigns or estimates probability of chance events.

1980 Percent Mastery	
Atlanta	Georgia
54	74

Grade 10 Objective 11: States the probability of various outcomes.

1980 Percent Mastery	
Atlanta	Georgia
20	42

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Basal Introduction

Two equally possible outcomes

Grade 3, pp. 318-319

Three or four equally possible outcomes

Grade 3, pp. 320-321

Six equally possible outcomes

Grade 4, pp. 346-347

Four equally possible outcomes

Grade 4, pp. 348-349

Probability expressed as a ratio

Grade 5, pp. 264-264; Grade 6, p. 202

0 and 1 probability

Grade 5, pp. 266-267; Grade 6, p. 203; Grade 7, p. 359; Grade 8, p. 369

Probability notation

Grade 7, pp. 358-359

Indicator Cluster 14: The student organizes data into tables, charts, and graphs.

Correspondence to GCRT

Grade 4 Objective 11: Makes diagrams, tables, graphs or other written records of relations.

1980 Percent Mastery	
Atlanta	Georgia
75	90

Grade 4 Objective 18: Collects information and makes tables, charts, and graphs of data gathered.

1980 Percent Mastery	
Atlanta	Georgia
71	86

Grade 8 Objective 18: Constructs and interprets different kinds of graphs; demonstrates how sampling may affect interpretation of data.

1980 Percent Mastery	
Atlanta	Georgia
76	87

Basal Introduction

Picture graphs

Grade 1, pp. 35-38, 137, 181

Interpreting and reading graphs

Grade 2, pp. 19, 20, 21, 22, 69, 202, 212; Grade 4, pp. 336-339, 340-343; Grade 5, pp. 342-345; Grade 6, pp. 320-322, 324-327; Grade 7, pp. 372-375

Input - output tables

Grade 2, p. 288; Grade 4, pp. 24-25; Grade 6, pp. 26, 69-70, 350; Grade 7, pp. 180-183

Graphs and tables

Grade 3, pp. 282-286

Interpreting circle graphs

Grade 6, pp. 332-333; Grade 7, pp. 378-380; Grade 8, pp. 382-383

Indicator Cluster 15: The student interprets data in the form of tables, charts, and graphs.

Correspondence to GCRT

Grade 4 Objective 19: Reads tables, charts and graphics of information and draws inferences from the information.

1980 Percent Mastery	
Atlanta	Georgia
68	87

Grade 8 Objective 18: Constructs and interprets different kinds of graphs; demonstrates how sampling may affect interpretation of data.

1980 Percent Mastery	
Atlanta	Georgia
76	87

Grade 10 Objective 12: Reads and interprets line graphs, bar graphs, and circle graphs.

1980 Percent Mastery	
Atlanta	Georgia
51	69

Grade 10 Objective 15: Reads and interprets flow charts, tree diagrams, factor trees, and Venn diagrams.

1980 Percent Mastery	
Atlanta	Georgia
24	47

Basal Introduction

Picture graphs

Grade 1, pp. 137, 181

Interpreting and reading graphs

Grade 2, pp. 19-22, 69, 202, 212; Grade 4, pp. 336-343; Grade 5, pp. 342-345; Grade 6, pp. 320-322, 324-324, 326-327; Grade 7, pp. 372-375

Input - output tables

Grade 4, pp. 24-25; Grade 6, pp. 26, 69-70, 350; Grade 7, pp. 180-183

Graphs and tables

Grade 3, pp. 282-286,

Interpreting circle graphs

Grade 6, pp. 332-333; Grade 7, pp. 378-380; Grade 8, pp. 382-383

Indicator Cluster 16: The student identifies customary or metric units to measure length, area, volume, weight, time and temperature.

Correspondence to GCRT

Grade 4 Objective 15: Selects unit of measure appropriate to a situation in which time, weight, length, area, volume, temperature, or money is measured.

1980 Percent Mastery	
Atlanta	Georgia
56	79

Grade 8 Objective 16: Determines measurements of length, area, volume, weight, time, temperature, money, using real numbers; specifies reasonable error of measurement.

1980 Percent Mastery	
Atlanta	Georgia
73	86

Grade 8 Objective 17: Uses measurement to solve problems from other fields such as vocational education and the sciences.

1980 Percent Mastery	
Atlanta	Georgia
38	59

Grade 10 Objective 16: Selects units of measure for length, area, volume, perimeter, circumference, angle, time, mass, temperature, and capacity.

1980 Percent Mastery	
Atlanta	Georgia
57	79

Basal Introduction

Metric System

Grade 1, pp. 259-260, 263, 265; Grade 2, pp. 231-232, 238, 241; Grade 3, pp. 136, 138-141; Grade 4, pp. 298-303; Grade 5, pp. 320-325; Grade 6, pp. 250-253, 257-260; Grade 7, pp. 242-243, 252-255; Grade 8, pp. 324-325, 322-323, 334-337

Customary System

Grade 1, pp. 261-262, 264, 266; Grade 2, pp. 233-235, 239-240, 242; Grade 3, pp. 134-135, 144-150; Grade 4, pp. 314-318; Grade 5, pp. 258-259, 332-333; Grade 6, pp. 264-271

Time

Grade 1, pp. 175-179, 199-202; Grade 2, pp. 71-76, 215-216; Grade 3, pp. 18-19, 40-43, 178-179, 262-263; Grade 4, pp. 308-311; Grade 5, p. 329

Temperature

Grade 2, p. 243; Grade 3, pp. 142-143; Grade 4, pp. 306-307; Grade 4, p. 319; Grade 5, pp. 328, 334; Grade 7, pp. 258-259; Grade 8, p. 338

Indicator Cluster 17: The student applies customary or metric units of measurement to determine length, area, volume, weight, time and temperature.

Correspondence to GCRT

Grade 4 Objective 15: Selects unit of measure appropriate to a situation in which time, weight, length, area, volume, temperature, or money is measured.

1980 Percent Mastery	
Atlanta	Georgia
56	79

Grade 8 Objective 16: Determine measurements of length, area, volume, weight, time, temperature, money, using real numbers; specifies resonable error of measurement.

1980 Percent Mastery	
Atlanta	Georgia
73	86

Grade 8 Objective 17: Uses measurement to solve problems from other fields such as vocational education and the sciences.

1980 Percent Mastery	
Atlanta	Georgia
38	59

Grade 10 Objective 16: Selects units of measure for length, area, volume, perimeter, circumference, angle, time, mass, temperature, and capacity.

1980 Percent Mastery	
Atlanta	Georgia
57	79

Basal Introduction

Metric System

Grade 1, pp. 259-260, 263, 265; Grade 2, pp. 231-232, 238, 241; Grade 3, pp. 136, 138-141; Grade 4, pp. 298-303; Grade 5, pp. 320-325; Grade 6, pp. 250-253, 257-260; Grade 7, pp. 242-243, 252-255; Grade 8, pp. 322-325, 334-337

Customary System

Grade 1, pp. 262-264, 266; Grade 2, pp. 233-235, 239-242; Grade 3, pp. 134-135, 144-150; Grade 4, pp. 314-318; Grade 5, pp. 258-259, 332-333; Grade 6, pp. 264-271

Time

Grade 1, pp. 175-179, 199-202; Grade 2, pp. 71-76, 215-216; Grade 3, pp. 18-19, 40-43, 178-179, 262-263; Grade 4, pp. 308-311; Grade 5, p. 329

Temperature

Grade 2, p. 243; Grade 3, pp. 142-143; Grade 4, pp. 306-307; Grade 4, p. 319; Grade 5, pp. 328, 334; Grade 7, pp. 258-259; Grade 8, p. 338

Indicator Cluster 18: The student estimates numbers (results) using round numbers with or without units of measurement.

Correspondence to GCRT

Grade 4 Objective 17: Makes estimates of measurements and makes comparisons.

1980 Percent Mastery	
Atlanta	Georgia
55	80

Basal Introduction

Estimating

Grade 3, p. 131; Grade 5, pp. 68-69; Grade 6, pp. 117, 308; Grade 7, pp. 76-77; Grade 8, pp. 182-183

Indicator Cluster 19: The student determines amounts of money.

Correspondence to GCRT: None

Basal Introduction

Money

Grade 1, pp. 203-212; Grade 2, pp. 151-155, 157-160; Grade 3, pp. 36-39; Grade 4, pp. 64-65

Money, making change

Grade 4, pp. 97-99; Grade 5, p. 67

Indicator Cluster 20: The student identifies sets of points using standard names.

Correspondence to GCRT

Grade 4 Objective 12: Names and identifies standard geometric shapes.

1980 Percent Mastery	
Atlanta	Georgia
60	81

Grade 8 Objective 11: Identifies and classifies geometric figures: point, line, plane, space, polygon, triangle, rectangle, square, and pyramid.

1980 Percent Mastery	
Atlanta	Georgia
43	64

Grade 10 Objective 19: Identifies and classifies sets of points like lines, planes, open and closed curves, angles, triangles, squares, and circles.

1980 Percent Mastery	
Atlanta	Georgia
22	43

Basal Introduction

Recognizing triangle, rectangle, square, circle

Grade K, pp. 75-80; Grade 1, pp. 246-251; Grade 2, pp. 221-224; Grade 4, pp. 277-279

Naming and drawing points, line segments, rays, lines, angles

Grade 4, pp. 104-111, 114-115

Recognizing polygons

Grade 4, p. 274

Indicator Cluster 21: The student identifies geometric relations and properties

Correspondence to GCRT

Grade 4 Objective 14: States the relation between points or between geometric figures, such as points inside or outside a closed curve or a line parallel to another line.

1980 Percent Mastery	
Atlanta	Georgia
58	78

Grade 8 Objective 13: Identifies the relation of two different sets of points, such as inside, outside, parallel, perpendicular, similar, and congruent.

1980 Percent Mastery	
Atlanta	Georgia
28	52

Grade 8 Objective 14: Solves simple geometric problems by using direct and approximate measurements, ratios of similar polygons, and the Pythagorean Theorem.

1980 Percent Mastery	
Atlanta	Georgia
27	49

Grade 10 Objective 21: Identifies inside, outside, parallel, perpendicular, similar, and congruent.

1980 Percent Mastery	
Atlanta	Georgia
13	31

Basal Introduction

Intersecting and parallel lines; perpendicular

Grade 4, pp. 116-117; Grade 6, pp. 118-119; Grade 8, pp. 96-97, 100-103

Measuring angles

Grade 5, pp. 146-152; Grade 6, pp. 110-116, 120-122; Grade 8, pp. 86-88

Diagonals of a parallelogram

Grade 5, p. 159

Congruent figures

Grade 5, pp. 166-167; Grade 6, p. 114; Grade 7, pp. 274-275

Similar figures

Grade 6, p. 314

Indicator Cluster 22: The student identifies points on Cartesian coordinates.

Correspondence to GCRT

Grade 10 Objective 14: Locates points on a Cartesian plane, such as a map.

1980 Percent Mastery	
Atlanta	Georgia
32	51

Basal Introduction

Coordinate geometry

Grade 7, pp. 342-345; Grade 8, pp. 344-345, 362-365

APPENDIX D:

CORRESPONDENCE OF BASIC SKILLS READING INDICATOR CLUSTERS TO CAT AND PRI OBJECTIVES

Indicator Cluster	CAT		PRI	
	Objectives	Tested at Levels	Objectives	Tested at Levels
1	42	14-19	85	D
2	32,34	11-19	42,43,45,46,48,50	A-D
3	36,37,38	11-19	57,62,64,65,67	A-D
4	—	—	—	--
5	40	13-19	74,75,76	B-D
6	43	16-19	86	D
7	37,38	11-19	62,67	A-D
8	38	12-19	66	B-D
9	38	12-19	64,65	A-D
10	93,94,96, 97	14-19	—	--
11	—	—	—	—
12	89,90,91, 92,95,98	14-19	—	—
13	89,90,91 92,95,98	19-19	—	—

APPENDIX E:

CORRESPONDENCE OF BASIC SKILLS MATHEMATICS INDICATOR CLUSTERS TO CAT AND DMI OBJECTIVES

Indicator Cluster	CAT		DMI	
	Objectives	Tested at Levels	Objectives	Tested at Levels
1	73,74,75	10-19	1,2,5,6,	A-E
2	—	—	—	—
3	—	—	—	—
4	—	—	—	—
5	—	—	—	—
6	79,88	12-19	—	—
7	69,70,71 72,80,88	10-19	13-25,27-38,42-53,58-66, 75-80,81-83,87-99,101-127 220,221	A-F
8	76,78,79	10-17	137,139,141,143,145,146, 148,150-153,155-156,173 176,178,183-185	A-F
9	88	13-19	—	—
10	—	—	—	—
11	80,82	10-15,17-19	229-233	A-F
12	—	—	—	—
13	—	—	—	—
14	84	13,14,16	—	—
15	84,87	13,14,16-19	204	C-F
16	—	—	—	—
17	82,83,85 86	11,12,15, 16-19	198,200,201,204,209,210 222	C,D,F
18	73	10-19	160-162	C,E,F
19	80	10-15	217	A-E
20	78,81	14-16,17-19	224,246,251,252,254	A,B,C
21	81	17-19	202,236-241,244-245,247 248,252,255-259,262	
22	81,87	17-19	278	C,E,F